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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,823	06/28/2002	Johann Jungbecker	AP9691	5255

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EXAMINER

KING, BRADLEY T

ART UNIT	PAPER NUMBER
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3683

DATE MAILED: 10/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/088,823

Applicant(s)

JUNGBECKER ET AL.

Examiner

Bradley T King

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 38-70 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 38-70 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Please remove the "means".

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the force-measuring elements of claim 61, and the projection and stop of claim 69 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 38-74 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 38 recites "the motor rotor". There is insufficient antecedent basis for this limitation in the claims.

Claim 40 recites "the clamping element". There is insufficient antecedent basis for this limitation in the claims.

Claim 46 recites "the clamping element". There is insufficient antecedent basis for this limitation in the claims.

Claim 55 recites "the threaded nut". There is insufficient antecedent basis for this limitation in the claims.

Claim 59 recites "the threaded spindle". There is insufficient antecedent basis for this limitation in the claims.

Claim 59 recites ", which is supported on a gearbox case". It is unclear from the claim language which element is supported on the gearbox case.

Claim 63 recites "the threaded spindle" and "the planet wheels". There is insufficient antecedent basis for these limitations in the claims. Claim 63 also recites "each one first planet wheel" and "each one second planet wheel". It is not clear which of "the planet wheels" is the one first wheel and one second wheel.

Claim 64 recites "the casing of the motor". There is insufficient antecedent basis for this limitation in the claims.

Claim 66 recites "the cover". There is insufficient antecedent basis for this limitation in the claims.

Claim 67 recites "the form-locking plug". There is insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 38-39, 45-47, 50-54, 56-57, 70-74 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 99/45292.

WO 99/45292 discloses all the limitations of the instant claims including; an actuating unit having an electric motor 11, a reducing gear 2 engaged with the electric motor, a freewheel mechanism coupled to the electric motor, wherein the freewheel mechanism 37-40 is configured to exert a binding effect on a bearing which supports the motor rotor thereby preventing rotation movement of the bearing. Note the mechanism acts directly on the inner race of the bearing to bind movement of the rotor.

Regarding claim 45, WO 99/45292 shows an electromagnet 40.

Regarding claim 46, WO 99/45292 shows a tappet 38 which is moveable into a force transmitting engagement with the clamping element 37.

Regarding claim 47, see page 15, second paragraph.

Regarding claim 50, WO 99/45292 shows a ball bearing 43.

Regarding claim 51, WO 99/45292 discloses a second reduction gear 3.

Regarding claims 52-53, the reducing gears 2-3 can be considered one or separate subassemblies as broadly recited by the claims.

Regarding claim 54, see figure 1.

Regarding claims 56-57, WO 99/45292 shows a planetary gear assembly 3 remote from the brake linings 4 and 5.

Regarding claims 70-71, see page 10, last 3 paragraphs.

Claims 38-39, 45-46, 50-53, 56-57, 70, and 72 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 99/27270.

WO 99/27270 discloses all the limitations of the instant claims including; an actuating unit, having an electric motor 6, a reducing gear 7 engaged with the electric motor, a freewheel mechanism coupled to the electric motor, wherein the freewheel mechanism 34 is configured to exert a binding effect on a bearing which supports the motor rotor thereby preventing rotation movement of the bearing. Note the mechanism acts directly on the inner race of the bearing to bind movement of the rotor.

Regarding claim 45, WO 99/27270 shows an electromagnet 36.

Regarding claim 46, WO 99/27270 shows a tappet 35 which is moveable into a force transmitting engagement with the clamping element 28.

Regarding claim 50, WO 99/27270 shows a ball bearing and a roller bearing.

Regarding claim 51, WO 99/27270 discloses a second reduction gear 17-21.

Regarding claims 52-53, the reducing gears 7 and 17-21 can be considered one or separate subassemblies as broadly recited by the claims.

Regarding claims 56-57, WO 99/27270 shows a planetary gear assembly 17-21 remote from the brake linings 4 and 5.

Regarding claim 70, see page 5, last paragraph.

Regarding claim 72, WO 99/27270 shows a sensor 31.

Claims 38-41, 50, and 54 are rejected under 35 U.S.C. 102(b) as being anticipated by Harrison et al (US# 4927212).

Harrison discloses all the limitations of the instant claims including; an actuating unit having an electric motor 3-4, a reducing gear 6-8 engaged with the electric motor, a freewheel mechanism 24-26 coupled to the electric motor, wherein the freewheel mechanism is configured to exert a binding effect on a bearing which supports the motor rotor thereby preventing rotation movement of the bearing.

Regarding claim 41, see figures 3-4.

Regarding claim 50, Harrison shows a ball bearing 20.

Regarding claim 54, Harrison shows a ball-and-thread drive 6-8.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 55, and 58-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/45292.

WO 99/45292 discloses all the limitations of the instant claims with exception to the combination of the freewheel mechanism with and actuator having a ball screw where a threaded nut is the actuating element. The details of an actuator having a ball screw mechanism with the threaded nut as the actuating element are disclosed in figure 3 of WO 99/45292 and the details of the freewheel mechanism are disclosed in figures 1-2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the freewheel locking mechanism disclosed in figures 1-2 of WO 99/45292 in the embodiment of figure 3 of WO 99/45292 so that a parking brake function can be realized, thereby simplifying the vehicle braking system.

Regarding claims 58-69, see figure 3.

Claims 38-44, and 48-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tiag (US# 4836338) in view of DE 4421161.

Tiag discloses an actuating unit including; an electric motor 240, a reducing gear 250 engaged with the electric motor, a freewheel mechanism 230 coupled to the electric

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motor to prevent rotation of the rotor. Tiag lacks the freewheel mechanism being configured to exert a binding effect on a bearing which supports the motor rotor, instead having the device coupled to the output shaft of the motor. DE 4421161 discloses a similar freewheel mechanism incorporated into a bearing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute a freewheel mechanism such as taught by DE 4421161 in the actuator of Tiag to reduce the size of the actuator, thereby providing a space efficient structure.

Regarding claim 40, DE 4421161 shows clamping elements 4.

Regarding claim 41, DE 4421161 shows an outer ring 2 with slopes and ramps. It would have been obvious to one of ordinary skill in the art at the time the invention was made to further include a profile on the inner ring to increase the retention capabilities of the device.

Regarding claim 42, see DE 4421161 and abstract.

Regarding claims 43-44, the examiner takes official notice that circlips and leaf springs are well known in the art for biasing elements. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize circlips or leaf springs for the spring element as they are art recognized equivalent structures.

Regarding claim 48, DE 4421161 discloses jamming rollers 4.

Regarding claim 49, the examiner takes official notice that both roller bearing elements and ball bearing elements are well known in the art and obvious variants. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize ball bearings as the clamping elements in place of the roller clamping

elements taught by DE 4421161 as an obvious alternate structure and functional equivalent.

Regarding claims 51, 54 and 57, Tiag shows a first reducing gear (the ball/screw assembly) and a planetary gear system 250.

Regarding claim 56, Taig shows a planetary gear assembly 250 remote from the brake linings 218 and 220.

Allowable Subject Matter

The combination of the features of claims 38, 41 and 45 may help to define over the prior art of record.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Koth et al, Schwatz (US Equiv of WO 99/27270), Schumann, and Crossman. All show electric brake actuators.

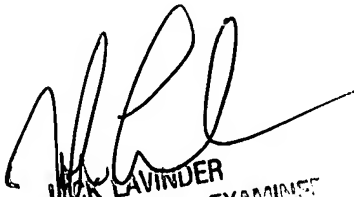
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley T King whose telephone number is (703) 308-8346. The examiner can normally be reached on 11:00-7:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder can be reached on (703) 308-3421. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

BTK


JACK LAVINDER
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TECHNOLOGY CENTER 3017